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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,916	07/16/2003	Maria Anna Rzeknik	51095	8945
21874	7590	12/19/2005	EXAMINER	
EDWARDS & ANGELL, LLP			LEADER, WILLIAM T	
P.O. BOX 55874			ART UNIT	
BOSTON, MA 02205			PAPER NUMBER	

1742

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/620,916

Applicant(s)

RZEZNIK ET AL.

Examiner

William T. Leader

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/28/04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bokisa et al (6,720,499) in view of Endo et al (5,795,828).
4. The Bokisa et al patent is directed to a method for applying coatings to a printed circuit board. A layer of tin is applied over circuitry comprising copper or a copper alloy. A cap layer is applied on the tin coating by immersion plating. See the abstract. One of the immersion-plateable metals suitable for the cap layer is silver (column 4, lines 59-65). Bokisa et al disclose that the plating bath may include a chelating agent useful in keeping the immersion plateable metal in solution. Chelating agents may include carboxylic acids such as citric acid (column 14,

lines 24-44). Sufficient acid is added to the bath to adjust the pH from about 0 to about 3 (column 7, lines 26-28). This range falls within the range of "less than or equal to 4" recited in instant claims 1, 6 and 7.

5. The bath of ~~claim~~ independent claim 7 and the methods of independent claims 1 and 6 differ from Bokisa et al by reciting one or more carboxylic acid-substituted nitrogen-containing heterocyclic compounds. The Endo et al patent is directed to an electroless plating bath. A variety of metals including silver may be deposited. Bokisa et al discloses that the bath may include agents which complex or chelate metals ions in solution. The compounds include carboxylic acids such as citric acid, picolinic acid, quinolinic acid (column 6, lines 1-8).

6. The prior art of record is indicative of the level of skill of one of ordinary skill in the art. It would have been obvious at the time the invention was made to have utilized picolinic acid or quinolinic acid as taught by Endo et al as a chelating agent in the process of Bokisa et al because they are carboxylic acids within the scope of those suggested by Bokisa et al and are listed as alternative compounds to citric acid by Endo et al. As noted above, citric acid is one of the specific carboxylic acids specified by Bokisa et al.

7. With respect to claims 2 and 6, Bokisa et al discloses the use of immersion plating to plate a printed wiring board substrate. With respect to claim 3, Bokisa et al discloses that a less electropositive metal on which the silver layer is deposited is tin. With respect to claims 4 and 9, Endo discloses the use of picolinic acid and quinolinic acid as noted above. With respect to claims 5 and 10, picolinic acid is based on the nitrogen-containing heterocyclic moiety pyridine. With respect to claim 8, sample immersion baths comprising silver are disclosed by Bokisa et al

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in columns 20 and 21 as solutions B-, B-7 and B-8. No cyanide, ammonia or ammonium ions are included in the solutions. With respect to claims 11 and 12, Bokisa discloses that the bath may include an imidazole which falls within the recitation azoles in claim 12.

### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1 and 7-10 rejected under 35 U.S.C. 102(b) as being anticipated by German patent 26 50 029. The German patent was cited in the search report of the European Patent Office in application EP 1418251 A1, which includes claims which correspond to the claims in the instant application, as an X reference. The German patent discloses a bath comprising silver and a carboxylic acid-substituted nitro-containing heterocyclic compound. Note the fourth compound in column 3. Instant claims 1 and 7-10 correspond to claims 1-4 and 7 of the European application.

### ***Double Patenting***

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g.,

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In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1-12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-15 of copending Application No.

10/620,951 in view of Bokisa et al. Claim 1 of the '951 application is directed to a immersion silver plating bath and differs from the bath recited in instant claim 7 by reciting one or more complexing agents in addition to the heterocyclic compound. Bokisa et al discloses the inclusion of a complexing agent as well as a chelating agent in an immersion bath. See column 8, lines 15-25. It would have been obvious at the time the invention was made to have included a complexing agent in the claims of the instant application as taught by Bokisa et al because control of the metal ions in solution would have been improved. Claim 1 of the '951 application recites that the bath is free of ammonia and ammonium ions. This limitation corresponds to instant claim 8.


This is a provisional obviousness-type double patenting rejection.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to William T. Leader whose telephone number is 571-272-1245. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
William Leader  
December 8, 2005

ROY KING   
SUPERVISORY PATENT EXAMINER  
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